

Serial No.: 09/209,676

Filing Date: December 11, 1998



CONCLUSION

Applicants respectfully submit that the application is now in condition for allowance and an early notification of such is solicited. If, upon review, the Examiner feels there are additional outstanding issues, the Examiner is invited to call the undersigned attorney:

Respectfully submitted,

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Date:

October 31, 2001

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Serial No.: 09/209,676

Filing Date: December 11, 1998



MARKED-UP VERSION

In the Claims

16. (Twice Amended) A method for increasing the signal-to-noise ratio in the characteristic optical response of [a sensor] an array having subpopulations of sensor elements comprising:

a) providing an array comprising:

i) at least a first subpopulation comprising first sensor elements; and

ii) a second subpopulation comprising second sensor elements;

b) contacting said array with a composition comprising at least a first target analyte;

[a] c) [measuring] obtaining a first measurement from [the optical responses of] at least two of said sensor elements of at least one of said subpopulations [upon exposure to a target analyte];

[b] d) summing [the optical response] said first measurements from said sensor elements; and

[c] e) performing a statistical analysis on said first measurements [of at least one of said subpopulations].

17. (Amended) [A] The method according to claim 16 [wherein prior to said summing, the baseline of at least one optical response signature is adjusted] further comprising obtaining at least a first control measurement and adjusting the baseline of said first measurement against said first control measurement.

18. (Amended) [A] The method according to claim 16 wherein the signal-to-noise ratio is increased by a factor of at least 10.

20. (Amended) The method of claim [15] 16, 25 or 27, wherein said sensor elements are beads and said [sensor] array comprises a population of beads dispersed on a substrate.

Serial No.: 09/209,676
Filing Date: December 11, 1998

25. (Amended) A method for amplifying the characteristic optical response of [a sensor] an array having subpopulations of sensor elements comprising:

a) providing an array comprising:

i) at least a first subpopulation comprising first sensor elements; and

ii) a second subpopulation comprising second sensor elements;

b) contacting said array with a composition comprising at least a first target analyte;

[a] c) [measuring] obtaining a first measurement from [the optical response of] at least two of said sensor elements of at least one of said subpopulations

[upon exposure to a target analyte]; and

[b] d) summing the optical responses[: and

c) performing a statistical analysis on said measurements of at least one of said subpopulations].

26. (Amended) A method according to claim 25 [wherein prior to said summing, the baseline of at least one optical response signature is adjusted] further comprising obtaining at least a first control measurement and adjusting the baseline of said first measurement using said first control measurement.

27. (Amended) A method comprising:

a) providing an array with a plurality of subpopulations of sensor elements;

b) contacting said array with a composition comprising at least a first target analyte;

[b] c) [measuring] obtaining first and second measurements from [the optical response of each] at least first and second sensor elements, respectively, from at least a first subpopulation [upon exposure to a target analyte]; and

[c] d) performing a statistical analysis on said first and second measurements [of at

Serial No.: 09/209,676
Filing Date: December 11, 1998

least one of said subpopulations].

31. (Amended) The method according to claim [16, 25 or 27] 20, further comprising determining outlying beads and excluding outlying beads from said subpopulation.

32. (Amended) The method according to claim 16, [25] 45 or 27, wherein said statistical analysis comprises calculating the mean of at least [one subpopulation] said first and second measurements.

33. (Amended) The method according to claim 16, [25] 45 or 27, wherein said statistical analysis comprises calculating the standard deviation of at least [one subpopulation] said first and second measurements.

34. (Amended) The method according to claim 16, [25] 45 or 27, further comprising evaluating the statistical validity of said measurements.

35. (Amended) The method according to claim 16, [25] 45 or 27, further comprising performing a second statistical analysis on said measurements.

38. (Amended) The method according to claim 16, [25] 45 or 27, further comprising comparing said statistical analysis of measurements obtained from at least two subpopulations.

40. (Amended) A method comprising:

a) providing an array comprising beads on a substrate comprising a plurality of subpopulations of sensor elements, wherein each sensor element comprises a bioactive agent that will bind a target analyte, and at least two of said subpopulations comprise different bioactive agents that will bind the same target analyte;

Serial No.: 09/209,676

Filing Date: December 11, 1998

b) contacting said array with a composition comprising at least a first target analyte;

[b] c) [measuring] obtaining a measurement from the optical response of each sensor element; and

[c] d) performing a statistical analysis on said measurements from each sensor element [of at least one of said subpopulations].